

WHAT IS CLAIMED IS:

1. A mass media storage system comprising:
  - a) a housing contained within a principal enclosure and comprised of a plurality of drives, the housing comprising an upper and a lower set of guide rail trays, each of the plurality of drives secured within a drive shuttle, each drive shuttle adapted for insertion between an unoccupied pair of upper and lower guide rail trays; and
  - b) one or more heater elements each operatively coupled proximate to one of the plurality of drives via the guide rail trays.
2. The system of claim 1, wherein the housing comprises a drive pack.
3. The system of claim 1, wherein the one or more heater elements are located proximate to one of an upper surface and a lower surface of the drives.
4. The system of claim 1, wherein each of the one or more heater elements is operatively coupled to an outer planar side of one of the guide rail trays.
5. The system of claim 4, wherein each of the one or more heater elements has a length and width equal to the length and width of an outer planar side of one of the guide rail trays.

6. The system of claim 4, wherein each of the one or more heater elements is adapted to attach to the outer planar side of one of the guide rail trays utilizing wide thermal range glue.
7. The system of claim 1, wherein each of the one or more heater elements comprises one of the guide rail trays.
8. The system of claim 1, wherein each of the one or more heater elements comprises a thermally conductive, electrically nonconductive, wide thermal range material.
9. The system of claim 1, wherein each of the one or more heater elements is operatively coupled to a corresponding power field effect transistor.
10. The system of claim 9, wherein the housing includes a drive circuit having electrical components and connectors operatively coupled to each of the plurality of drives and each of the power field effect transistors, the drive circuit adapted to provide power individually to each of the plurality of drives and to each of the one or more heater elements.
11. The system of claim 10, wherein the housing includes an enclosure circuit operatively contained within the principal enclosure, the enclosure circuit

operatively connected to the drive circuit and adapted to operatively control each heater element and each of the plurality of drives.

12. A mass data storage apparatus comprising:
  - a) a principal enclosure including one or more fans;
  - b) a drive pack contained within the principal enclosure and comprised of a plurality of drives; and
  - c) one or more heater elements each operatively coupled proximate to one of the plurality of drives; and
  - d) an enclosure circuit operatively contained within the principal enclosure, the enclosure circuit adapted to operatively control each of the heater elements and each of the fans.
13. The apparatus of claim 12, wherein each of the one or more fans are forced air convection fans located in a posterior region of the principal enclosure.
14. The apparatus of claim 12, wherein the drive pack is comprised of a housing, the housing comprising an upper and a lower set of guide rail trays.
15. The apparatus of claim 14, wherein each of the plurality of drives is secured within a drive shuttle, each drive shuttle adapted for insertion between an unoccupied pair of the upper and lower set of guide rail trays.

16. The apparatus of claim 14, wherein each of the one or more heater elements is operatively coupled to an outer planar side of one of the guide rail trays.
17. The apparatus of claim 14, wherein each of the one or more heater elements comprises one of the guide rail trays.
18. The apparatus of claim 12, wherein the enclosure circuit comprises a plurality of electrical connectors and one or more processors operatively coupled to the drive pack, at least one of the one or more processors adapted to control the operation of one or more of the drives and one or more of the heater elements.
19. The assembly of claim 18, wherein at least one of the processors includes internally programmed operation code, the code involving operations for the at least one processor in order to maintain a correct operating temperature for one or more of the plurality of drives when an initial starting temperature is outside of a range of temperatures required for reliable operation of the drives.
20. The assembly of claim 19, wherein the code includes a pulse width modulated heating program.
21. The assembly of claim 19, wherein the code includes feedback-based processor management of power to the one or more heating elements and to the one or more fans based on one or more temperature sensors operatively coupled within

the drive pack, the sensors adapted to be operatively coupled to and monitored by the at least one processor.

22. The assembly of claim 19, wherein the code includes feedback-based processor management of power to each of the plurality of drives based on one or more temperature sensors operatively coupled within the drive pack, the sensors adapted to be operatively coupled to and monitored by the at least one processor.
23. The apparatus of claim 12, wherein the drive pack includes a drive circuit having electrical components and connectors operatively coupled to each of the plurality of drives, the drive circuit adapted to provide power individually to each of the plurality of drives and to each of the one or more heater elements, the drive circuit operatively coupling the enclosure circuit to the drive pack.
24. The apparatus of claim 23, wherein the drive circuit is operatively coupled to a plurality of power field effect transistors, where each of the power field effect transistors is operatively coupled to corresponding heater elements.

25. The apparatus of claim 12, wherein each of the one or more fans is operatively coupled to a power field effect transistor that is operatively coupled to the enclosure circuit, where at least one processor adapted to individually control the operation of the one or more fans.
26. A method of achieving a correct operating temperature for one or more of a plurality of drives within a drive pack contained within a principal enclosure when an initial starting temperature is outside of a range of temperatures required for reliable operation of the drives comprising:
- a) monitoring the status of the plurality of drives;
  - b) determining whether all criteria are met to start heat phase;
  - c) engaging the heat phase if all the criteria are met; and
  - d) determining whether the heat phase should be terminated.
27. The method of 26, further comprising the step of programming at least one processor included on an enclosure circuit contained within the principal enclosure with code including a pulse width modulated heating program which includes feedback-based processor management of power to one or more heating elements operatively coupled proximate to the plurality of drives within the drive pack and to one or more fans operatively coupled within the principal enclosure.

28. The method of claim 26, wherein the step of monitoring the status of the plurality of drives further comprises monitoring whether the drive pack is present and determining whether the drive pack is outside of a range of temperatures required for reliable operation of the drives.
29. The method of claim 27, wherein the step of monitoring the status of the plurality of drives further comprises calling up a drive pack services routine within the programmed code within the processor to perform the status monitoring function.
30. The method of claim 26, wherein the step of determining whether all criteria are met to start heat phase further comprises determining whether the user has aborted starting the heat phase, determining whether temperature sensors meant for monitoring the drive pack temperatures are failing, determining whether the minimum temperatures have been achieved, and determining whether the heating option has been installed.
31. The method of claim 30, wherein the step of determining whether all criteria are met to start heat phase further comprises calling up a heat phase control routine within the programmed code within the processor to perform the criteria determining function.
32. The method of claim 26, wherein the step of engaging the heat phase if all the criteria are met further comprises determining the appropriate pulse width

modulation levels, providing the operating instruction for the one or more heater elements and the one or more fans, and determining whether the pulse width modulation level should be advanced.

33. The method of claim 32, wherein the step of engaging the heat phase if all the criteria are met further comprises calling up a heat phase control routine within the programmed code within the processor to perform the criteria determining function.
34. The method of claim 26, wherein the step of engaging the heat phase if all the criteria are met further comprises initializing and controlling the heater hardware and executing a "seed " based pulse width modulation algorithm in operating the heater hardware.
35. The method of claim 34, wherein the step of engaging the heat phase if all the criteria are met further comprises calling up a heater-pulse width modulation routine within the programmed code within the processor to perform the criteria determining function.



36. The method of claim 26, wherein the step of engaging the heat phase if all the criteria are met further comprises initializing and controlling the fan hardware and executing a “seed “ based pulse width modulation algorithm in operating the fan hardware.
37. The method of claim 36, wherein the step of engaging the heat phase if all the criteria are met further comprises calling up a fan-pulse width modulation routine within the programmed code within the processor to perform the criteria determining function.
38. The method of claim 26, wherein the step of determining whether the heat phase should be terminated further determining whether the temperature set-point has been exceeded or determining whether the time duration has elapsed.
39. The method of claim 38, wherein the step of determining whether the heat phase should be terminated further comprises calling up a heat phase control routine within the programmed code within the processor to perform the criteria determining function.
40. A computer readable medium comprising the instructions for performing the method of claim 26.